

Bear Hollow Bioblitz Report April 2006

Region II held its second bioblitz at Bear Hollow Mountain in April 2006. The main objective was to add to the species list obtained from the previous bioblitz held in September 2005. Other objectives included finding other locations of species of greatest conservation need (GCN) that had been found in the Old Lakeview Campground and to find locations for Allegheny Woodrats that have previously been sighted on the management area. Species found in the campground include Green Salamander, Four-toed Salamander, and Eastern Box Turtle. The campground has been destroyed due to it being an "eyesore." All cover objects previously used by these species were removed in the destruction, this being a reason why an objective was set to find them outside of the campground.

Three survey sites were chosen and each contained rock houses, rock outcrops, and some form of water, including streams, seeps and waterfalls. These sites were where the small mammal trapping and visual encounter surveys (VES) were performed during the day. Turtle and minnow traps were placed outside of the survey sites in depressions. These depressions are characterized by poorly drained soils that retain water throughout much of the year. A nighttime visual encounter survey was performed in a wooded area along highway 16. This site is typically dry, but the culvert that drains the area had been blocked for sometime, allowing the area to flood. Also, on the second night, personnel performed a road survey on highway 16 that divides the management area into two halves.

Each survey team set 200 small mammal traps at their respective sites. Between the three survey teams, a total of 600 Sherman traps were set. There were 38 captures in two nights, representing 7 species. Catch per unit effort is shown in Table 1. The most common species captured was *Peromyscus leucopus* (22 captures). A survey team in a clearcut just off of highway 16 captured a single Golden mouse, a GCN species.

Table 1. Catch per Unit Effort for Sherman Trapping

Site #	# of Captures	# of Traps	Total Trap Nights	Catch Per Unit Effort
1	19	200	400	0.04750
2	13	200	400	0.03250
3	6	200	400	0.01500
Total Catch Per Unit Effort				0.03167

VES were to be performed as often as time allowed. During the bioblitz a total of 6 visual encounter surveys were performed, resulting in 28 total captures. These captures represented 13 species. Catch per unit effort is shown in Table 2. Four-toed Salamanders were the only GCN species recorded during these visual encounter surveys.

Table 2. Catch Per unit Effort for all Visual Encounter Surveys

Site #	# of Personnel	Length of Time	# of Man Hours	# of Captures	# Captures / Man Hour	Length of Transect	Total Area Searched (m ²)	# of Captures / m ²
1	5	45	3.75	5	1.33	100.00	300.00	0.0044
2	6	60	6	16	2.67	4827.00	20756.00	0.0001
3	3	45	2.25	13	5.78	100.00	300.00	0.0193
4	3	30	1.5	4	2.67	100.00	600.00	0.0044
5	4	1.5	6	8	1.33	100.00	800.00	0.0017
6	13	1	13	11	0.85	30.00	1500.00	0.0073

A total of three hoop nets were set to inventory turtles. A total of four nets were set for three nights, resulting in 0 captures. Catch per unit effort was 0. Minnow traps were set in combination with the turtle traps. A total of four minnow traps were set for two nights as well. There were 36 total captures representing 3 species. Catch per Unit Effort is illustrated in Table 3. Eastern Newts were captured the most, followed by Green Frog tadpoles and Marbled Salamander larvae.

Table 3. Catch Per Unit Effort for Minnow Traps Set.

Site #	# of Trap Nights	# of Captures	CPUE
1	3	11	3.6667
2	3	6	2.0000
3	3	0	0.0000
4	3	19	6.3333

The road survey conducted at night resulted in 16 animals being enumerated. Two species were represented, 15 American Toads and 1 Zigzag Salamander. Unfortunately, no snakes were spotted during the survey.

All survey teams were highly encouraged to explore outside of their pre-selected survey sites. There are many unique geologic formations on the management area that may provide beneficial species information. By doing this, personnel were able to find a number of new locations for Green Salamanders and Four-toed salamanders that had not been previously mapped.

Any animal encountered and no methodology used was listed as an incidental capture. Forty-seven animals were incidentally encountered during the two-day bioblitz, representing 17 species. There were three species of snakes documented, one of which was the Timber Rattlesnake, a GCN species. Also, during the exploration of one of the areas, *Glaucomys volans* was found. Unfortunately, it had been predated upon. There was an unidentifiable bat encountered while traveling to one of the survey sites as well.

TWRA personnel and a volunteer from Tennessee Ornithological Society also compiled a list of avian species using the management area. A number of birds using the area were migrants. During two and a half days, a total of 81 species were seen or heard. Table 4 lists all bird species compiled during the bioblitz. Twenty-five of the 81 species found were warblers, which include Worm-eating Warblers and Cerulean Warblers. Sites where these two species were seen will be checked this summer to determine if Bear Hollow Mountain WMA is used for breeding.

Overall, there were a total of 206 animals trapped and encountered, either visually or incidentally, and aurally during this bioblitz representing 41 species. All objectives set prior to this bioblitz were achieved with the exception of finding locations for Allegheny Woodrats. Locations were found outside of the campground for the previously mentioned GCN species. Information collected from this bioblitz will be used to develop a management plan that will include these species. Currently, there are projections to burn the area where the Golden Mouse was captured in the upcoming year. There will need to be other areas located on the management area where they may possibly exist, as well as to develop a burn strategy that would leave habitat for this species, but meet the land manager's objectives.

Table 4. A List of all Birds Using Bear Hollow Mountain WMA and Surrounding Lands.

Wild Turkey	American Crow	Yellow-throated Warbler
Black Vulture	Brown-headed Cowbird	Pine Warbler
Turkey Vulture	N. Rough-winged Swallow	Prairie Warbler
Broad-winged Hawk	Barn Swallow	Western Palm Warbler
Red shouldered Hawk	Carolina Chickadee	Blackpoll Warbler
Red-tailed Hawk	Tufted Titmouse	Cerulean Warbler
Mourning Dove	White breasted Nuthatch	Black and white Warbler
Yellow-billed Cuckoo	Carolina Wren	Prothonotary Warbler
Great Horned Owl	Ruby-crowned Kinglet	Worm-eating Warbler
Barred Owl	Blue-gray Gnatcatcher	Ovenbird
Whip-poor Will	Eastern Bluebird	Louisiana Waterthrush
Chimney Swift	American Robin	Kentucky Warbler
Ruby-throated Hummingbird	Wood Thrush	Common Yellowthroat
Red-bellied Woodpecker	Brown Thrasher	Hooded Warbler
Downy Woodpecker	N Mockingbird	Yellow-breasted Chat
Hairy Woodpecker	Gray Catbird	Summer Tanager
Pileated Woodpecker	Cedar Waxwing	Scarlet Tanager
Eastern Wood-pewee	Blue-winged Warbler	Eastern Towhee
Eastern Phoebe	Tennessee Warbler	Field Sparrow
Great crested Flycatcher	Nashville Warbler	Lark Sparrow
Eastern Kingbird	Northern Parula	White-throated Sparrow
Baltimore Oriole	Yellow Warbler	Northern Cardinal
White-eyed Vireo	Chestnut-sided Warbler	Rose-breasted Grosbeak
Yellow-thr Vireo	Black-throated Blue Warbler	Indigo Bunting
Blue-headed Vireo	Yellow-rumped Warbler	Eastern Meadowlark
Red-eyed Vireo	Black-throated Green Warbler	Common Grackle
Blue Jay	Blackburnian Warbler	American Goldfinch



Total Species List with Total Captures for Each

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Bear Hollow Mountain W.M.A

#	Species	Scientific Name	Global Rank	State Rank
26	Eastern Newt	<i>Notophthalmus viridescens</i>	G5	S5
20	Northern Dusky Salamander	<i>Desmognathus fuscus fuscus</i>	G5	-
3	Red Salamander	<i>Pseudotriton ruber</i>	G5	S5
3	2 Lined Salamander	<i>Eurycea cirrigera</i>	G5	S5
1	Long-tailed Salamander	<i>Eurycea longicauda</i>	G5	S5
15	Spotted Dusky Salamander	<i>Desmognathus fuscus conanti</i>	G5	-
10	Seal Salamander	<i>Desmognathus monticola</i>	G5	S5
4	Green Salamander	<i>Aneides aeneus</i>	G3	S3
1	Spring Salamander	<i>Gyrinophilus porphyriticus</i>	G5	S5
8	Marbled Salamander	<i>Ambystoma opacum</i>	G5	S5
9	Northern Slimy Salamander	<i>Plethodon glutinosus glutinosus</i>	G5	-
6	Zigzag Salamander	<i>Plethodon ventralis</i>	G4	S4
3	Four-toed Salamander	<i>Hemidactylium scutatum</i>	G5	S3
1	Southern Leopard Frog	<i>Rana sphenoccephala</i>	G5	S5
H	Pickerel Frog	<i>Rana palustris</i>	G5	S5
1	American Bullfrog	<i>Rana catesbiana</i>	G5	S5
8	Green Frog	<i>Rana clamitans</i>	G5	S5
1	Fowler's Toad	<i>Bufo fowleri</i>	G5	S5
22	American Toad	<i>Bufo americanus</i>	G5	S5
H	Mountain Chorus Frog	<i>Pseudacris brachyphona</i>	G5	S4
4	Northern Spring Peeper	<i>Pseudacris crucifer crucifer</i>	G5	-
1	Northern Cricket Frog	<i>Acris crepitans</i>	G5	S5
H	Gray Treefrog	<i>Hyla versicolor</i>	G5	S5
3	Eastern Box Turtle	<i>Terrapene carolina</i>	G5	S4
1	Broad-head Skink	<i>Eumeces laticeps</i>	G5	S5
2	5 Line Skink	<i>Eumeces fasciatus</i>	G5	S5
2	Northern Fence Lizard	<i>Sceloporus undulatus hyacinthinus</i>	G5	-
2	Ring-necked Snake	<i>Diadophis punctatus</i>	G5	S5
1	Northern Water Snake	<i>Nerodia sipedon</i>	G5	S5
1	Black Rat Snake	<i>Elaphe obsoleta obsoleta</i>	G5	-
6	Eastern Worm Snake	<i>Carphophis amoenus</i>	G5	S5
2	Timber Rattlesnake	<i>Crotalus horridus</i>	G4	S4
S	Black Racer	<i>Coluber constrictor</i>	G5	S5
2	Eastern Chipmunk	<i>Tamias striatus</i>	G5	S5
1	Southern Flying Squirrel	<i>Glaucomys volans</i>	G5	S5
8	Cotton Mouse	<i>Peromyscus gossypinus</i>	G5	S5
22	White-footed Mouse	<i>Peromyscus leucopus</i>	G5	S5
1	Deer Mouse	<i>Peromyscus maniculatus</i>	G5	S5
3	Woodland Vole	<i>Microtus pinetorum</i>	G5	S5
1	Golden Mouse	<i>Ochrotomys nuttalli</i>	G5	S5
1	Hispid Cotton Rat	<i>Sigmodon hispidus</i>	G5	S5
-	Unidentified bat	-	-	-

H = Species that were encountered aurally

Species Highlighted in red indicates GCN species



Total Species List
 Bear Hollow Mountain W.M.A

Scientific Name	Common Name	Global Rank	State Rank
<i>Acris crepitans</i>	Northern Cricket Frog	G5	S5
<i>Pseudacris crucifer crucifer</i>	Northern Spring Peeper	G5	-
<i>Pseudacris brachyphona</i>	Mountain Chorus Frog	G5	S4
<i>Rana sphenoccephala</i>	Southern Leopard Frog	G5	S5
<i>Rana clamitans</i>	Green Frog	G5	S5
<i>Rana palustris</i>	Pickerel Frog	G5	S5
<i>Rana catesbiana</i>	American Bullfrog	G5	S5
<i>Hyla versicolor</i>	Gray Treefrog	G5	S5
<i>Bufo americanus</i>	American Toad	G5	S5
<i>Bufo fowleri</i>	Fowler's Toad	G5	S5
<i>Coluber constrictor</i>	Racer	G5	S5
<i>Crotalus horridus</i>	Timber Rattlesnake	G4	S4
<i>Heterodon platirhinos</i>	Eastern Hog-nosed Snake	G5	S4
<i>Agkistrodon contortrix</i>	Copperhead	G5	S5
<i>Diadophis punctatus</i>	Ring-necked Snake	G5	S5
<i>Nerodia sipedon</i>	Northern Water Snake	G5	S5
<i>Carphoris amoenus</i>	Eastern Wormsnake	G5	S5
<i>Elaphe obsoleta obsoleta</i>	Black Rat Snake	G5	-
<i>Sceloporus undulatus hyacinthinus</i>	Northern Fence Lizard	G5	-
<i>Scincella lateralis</i>	Ground Skink	G5	S5
<i>Eumeces fasciatus</i>	Five-Lined Skink	G5	S5
<i>Eumeces laticeps</i>	Broad-headed Skink	G5	S5
<i>Chelydra serpentina</i>	Eastern Snapping Turtle	G5	S5
<i>Kinosternon subrubrum</i>	Eastern Mud Turtle	G5	S5
<i>Terrapene carolina</i>	Eastern Box Turtle	G5	S4
<i>Anolis carolinensis</i>	Green Anole	G5	S3
<i>Notophthalmus viridescens</i>	Eastern Newt	G5	S5
<i>Eurycea longicauda</i>	Longtail Salamander	G5	S5
<i>Plethodon glutinosus glutinosus</i>	Northern Slimy Salamander	G5	-
<i>Plethodon ventralis</i>	Zigzag Salamander	G4	S4
<i>Eurycea cirrigera</i>	Southern Two-Lined Salamander	G5	S5
<i>Eurycea lucifuga</i>	Cave Salamander	G5	S5
<i>Aneides aeneus</i>	Green Salamander	G3	S3
<i>Ambystoma opacum</i>	Marbled Salamander	G5	S5
<i>Ambystoma maculatum</i>	Spotted Salamander	G5	S5
<i>Desmognathus fuscus fuscus</i>	Northern Dusky Salamander	G5	-
<i>Desmognathus fuscus conanti</i>	Spotted Dusky Salamander	G5	-
<i>Desmognathus monticola</i>	Seal Salamander	G5	S5
<i>Gyrinophilus porphyriticus</i>	Spring Salamander	G5	S5
<i>Hemidactylium scutatum</i>	Four-toed Salamander	G5	S3
<i>Pseudotriton ruber</i>	Red Salamander	G5	S5
<i>Glaucomys volans</i>	Southern Flying Squirrel	G5	S5
<i>Tamias striatus</i>	Eastern Chipmunk	G5	S5
<i>Microtus pinetorum</i>	Woodland Vole	G5	S5
<i>Sigmodon hispidus</i>	Hispid Cotton Rat	G5	S5
<i>Peromyscus leucopus</i>	White-footed Mouse	G5	S5

<i>Peromyscus maniculatus</i>	Deer Mouse	G5	S5
<i>Peromyscus gossypinus</i>	Cotton Mouse	G5	S5
<i>Ochrotomys nuttalli</i>	Golden Mouse	G5	S5
<i>Neotoma magister</i>	Allegheny Woodrat	G3	S3
<i>Lasiurus borealis</i>	Eastern Red Bat	G5	S5
<i>Myotis lucifugus</i>	Little brown myotis	G5	S5
<i>Myotis septentrionalis</i>	Northern Long-eared Bat	G4	S4

*Red indicates target species.